In re Application of: Paul M. Tsou, M.D.

Serial No.: 10/749,457 Filed: December 31, 2003

For: Minimal Access Apparatus for Endoscopic Spinal Surgery Group Art Unit: 3732

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## Amendments to the Specification

Please replace paragraph [0005] with the following amended paragraph:

[0005] The traditional surgical method of spinal nerve element decompression is by the posterior transcanal or transforaminal open approach. Laminectomy and facetectomy are required to gain entry into the spinal canal and disc space. Two blades soft tissue retractor/spreader is commonly used to maintain exposure leading to the lamina of the target level. The size of the typical skin incision is two to four inches for a single level disc surgery. More recently smaller diameter tubular retractors, which have non-tapered ends, have become available. Prior art soft tissue retractors remain positioned superficial to the lamina. Additional Additionally A a different type of retractor is needed when surgical maneuver enters the spinal canal. Traditionally, this procedure has required two to three days of hospitalization after completion of the surgery.

Please replace paragraph [0006] with the following amended paragraph:

[0006] Chronic back pain due to disc failure, without dominant extremity symptoms may also cause chronic functional impairment. Prior art solutions have surgically fused adjacent vertebrae together by placing bridging bone, or other osteoinductive and osteoconductive material from one vertebra above to one vertebrae vertebra below the symptomatic discs. The native bone fusion surfaces may include the posterior vertebral elements, the vertebral end plates or a combination of the two. Sometimes, metal rods and screws have been used to stabilize the spinal fusion segments from the posterior approach.

Please replace paragraph [0007] with the following amended paragraph:

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[0007] The invasive nature of prior art techniques cause significant access tissue trauma, even when the skin incision is reduced in length. The principle of minimal access surgery is to create the smallest possible cross sectional area tissue tunnel to the target pathology, without compromising the stabilizing structural elements. This reduces the amount of trauma suffered by the patient. At the same time, the minimal access tunnel needs to have the appropriate cross-sectional size and shape so that it can accommodate the transit of surgical tools and implants. The A novel apparatus that ereate creates and maintain maintains the minimal access tunnels are tunnel is the inventions invention of this application.

Please replace paragraph [0009] with the following amended paragraph:

[0009] The access approach is posterolateral transforaminal, lateral to the spinal canal. In using this approach, the risks of traumatizing nerve elements and dural tears from sharp instruments and retraction are greatly reduced. The working soft tissue channel for simple herniated disc extraction is approximately 7 mm in diameter and the diameter is somewhat larger for fusion surgery. Because of the ultra miniaturization of the instruments, the procedure can be performed using local anesthetic agents and conscious sedation. Unlike prior art, overnight hospital stays are not necessary.

Please replace paragraph [0026] with the following amended paragraph:

[0026] The present invention relates to minimal access apparatus and tools used during endoscopic spinal surgery. These tools are designed so as to enable a surgeon to more effectively perform the surgical techniques described herein and minimize trauma to a patient. In order to better understand the structure and operation of the tools, the preferred surgical methods will be briefly described. The preferred methodology is described in more detail in U.S. patent application. Ser. Patent No. 09/997,364 6,851,430. Although the tools of the present invention

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are specifically designed for use with the preferred surgical methods, they are not limited to those specific methods. Rather, the tools can be used in a variety of different surgical techniques and can be effectively used in a variety of operations which are not specifically described herein.

Please replace paragraph [0030] with the following amended paragraph:

[0030] When the spinal pathology requires a fusion procedure, the circular-shaped annular fenestration is enlarged by inserting a preferred tapered obturator/dilator of predetermined diameter. Once the obturator tapered end is deep inside the disc annulus, the surgeon inserts the preferred oval spreader over the obturator.

Please replace paragraph [0031] with the following amended paragraph:

[0031] With the oval spreader deep end inside the disc, the annular opening is then further dilated. Progressively larger diameter solid rods are placed in the channel portion of the oval spreader until the opening is dilated to the largest anatomically feasible size,

Please replace paragraph [0048] with the following amended paragraph:

[0048] The nucleus pulposus of a disc and its adjacent cartilaginous end-plates require a variety of different tools to achieve complete excision, U.S. patent application Ser. Patent No. 09/997,361 6,851,430 describes several tools that are available for performing this process. Several additional tools are illustrated in FIGS, 6 through 8.